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## INSURANCE AUTHORITIES RATE 5G AND ELECTROMAGNETIC RADIATION AS “HIGH RISK”

### Reports & White Papers

Insurance companies do not want to insure for electromagnetic radiation because it is simply too risky. Please see on this webpage the reports, white papers and news articles where companies report on the liability issue.

*“It may take two more decades to know if electromagnetic radiofrequency energy is a significant liability issue for telecommunications companies, so, in the interim, insurers are treating the risk as cautiously as a downed power line after a storm.*

*Insurers often exclude the risk from commercial general liability policies, strictly limit the coverage or avoid policyholders in the wireless industry, brokers say.”*

— [Roseanne White Geisel, 6/3/2007 Business Insurance](#)

## 2019 Swiss Re Report

5G is rated as a “high impact” emerging risk affecting property and casualty claims in more than 3 years.

“Off the leash – 5G mobile networks” (p. 29)

“5G – short for fifth generation – is the latest standard for cellular mobile communications. Providing ultrafast broadband connection with higher capacity and lower latency, 5G is not only heaven for your smartphone. It will enable wireless connectivity in real time for any device of the Internet of things (IoT), whether that be autonomous cars or sensor-steered factory. In doing so, it will allow decentralised seamless interconnectivity between devices.

To allow for a functional network coverage and increased capacity overall, more antennas will be needed, including acceptance of higher levels of electromagnetic radiation. In some jurisdictions, the rise of threshold values will require legal adaptation. Existing concerns regarding potential negative health effects from electromagnetic fields (EMF) are only likely to increase. An uptick in liability claims could be a potential long-term consequence.

Other concerns are focused on cyber exposures, which increase with the wider scope of 5G wireless attack surfaces. Traditionally IoT devices have poor security features. Moreover, hackers can also exploit 5G speed and volume, meaning that more data can be stolen much quicker. A large-scale breakthrough of autonomous cars and other IoT applications will mean that security features need to be enhanced at the same pace. Without, interruption and subversion of the 5G platform could trigger catastrophic, cumulative damage. ...

Potential impacts:

- Cyber exposures are significantly increased with 5G, as attacks become faster and higher in volume. This increases the challenge of

defence.

- Growing concerns of the health implications of 5G may lead to political friction and delay of implementation, and to liability claims. The introductions of 3G and 4G faced similar challenges.
- Information security and national sovereignty concerns might delay implementation of 5G further, increasing uncertainty for planning authorities, investors, tech companies and insurers.
- Heated international dispute over 5G contractors and potential for espionage or sabotage could affect international cooperation, and impact financial markets negatively.
- **As the biological effects of EMF in general and 5G in particular are still being debated, potential claims for health impairments may come with a long latency.**

Read the [2019 Swiss Re Report](#)

## Vodafone 2017 Report

This 2017 Report ranks the EMF health risk issue as having a “high” impact . Please see page 29 of the report for a graphic on “Our Principal Risks” that features the EMF risk as “High.” The graphic states, “EMF health related risks EMF found to pose health risks causing reduction in mobile usage or litigation.” [See the Vodaphone 2017 graphic here.](#) [Vodafone 2018 Report](#) (EMF is a “Key Principal Risk” rated as high in the graphic on page 38)

**In addition this Report states that:**

“What is the risk? Electro-magnetic signals emitted by mobile devices and base stations may be found to pose health risks, with potential impacts including: changes to national legislation, a reduction in mobile phone usage or litigation.”

[Read the Vodafone 2017 Report](#)

## 2014 Swiss Re SONAR Report

[“Swiss Re SONAR 2014 Report: New emerging risk insights.”](#) Unforeseen consequences of electromagnetic fields are categorized as having a potential impact of HIGH in this report on emerging risks.

“This report highlights 26 new emerging risk themes. It is meant to provide a first indication of what might lie beyond the horizon so that our readers can prepare for future challenges. Themes were identified through Swiss Re’s SONAR process and have been reviewed by Swiss Re’s emerging risk management experts. They draw on all areas of insurance, and many themes have cascading effects across areas and lines of business. Unforeseen consequences of electromagnetic fields are categorized as having high potential impacts.”

The section on Smart Cities (page 22) states that “an increasing level of interconnectivity and the growing prevalence of digital steering and feedback systems also give rise to new vulnerabilities. These could involve cascading effects with multiple damages as well as long-lasting interruptions if the problems turned out to be complex and/or difficult to repair. Interconnectivity and permanent data generation give rise to concerns about data privacy, and exposure to electromagnetic fields may also increase.”

## 2013 Swiss Re SONAR Report

[Swiss Re SONAR 2013 Report: “Emerging risk insights.”](#)

“Unforeseen consequences of electromagnetic fields. Potential impact: High. Time Frame: >10 Years.

The ubiquity of electromagnetic fields (EMF) raises concerns about potential implications for human health, in particular with regard to the use of mobile phones, power lines or antennas for broadcasting. Over the

last decade, the spread of wireless devices has accelerated enormously. The convergence of mobile phones with computer technology has led to the proliferation of new and emerging technologies. This development has increased exposure to electromagnetic fields, the health impacts of which remain unknown. Anxiety over the potential risks related to EMF has risen. Studies are difficult to conduct, since time trend studies are inconsistent due to the still rather recent proliferation of wireless technology. The WHO has classified extremely low-frequency magnetic fields and radiofrequency electromagnetic fields, such as radiation emitted by cell phones, as potentially carcinogenic to humans (Class 2B carcinogen). Furthermore, a recent ruling by an Italian court suggested a link between mobile phone radiation and human health impairment. Overall, however, scientific studies are still inconclusive regarding possible adverse health effects of EMF. If a direct link between EMF and human health problems were established, it would open doors for new claims and could ultimately lead to large losses under product liability covers. Liability rates would likely rise.”

Read the [Swiss Re SONAR 2013 Report: “Emerging risk insights.”](#)

## Swiss Re 2004 Report

Holzheu, Thomas and **RudolfENZ.**, The economics of liability losses – insuring a moving target, Sigma No 6/2004

Emerging risks worldwide

“What is the next asbestos?” is a question that all insurers ask and worry about. Since many potential liability risks would be covered by liability policies unless explicitly excluded, managing so-called “emerging risks” has become a key challenge for liability underwriters. As yet, there is no clear definition of what precisely constitutes an “emerging risk”, but we will illustrate the phenomenon with a few examples.

Electromagnetic fields, genetically modified food, and nanotechnology are discussed as possible emerging risks. Risks to the human body arising from electromagnetic fields produced by power lines, cell phones, and other mobile communication equipment are currently the subject of intense debate.

## Swiss Re 2004 The Risk Landscape of the Future

on cell phone radiation, "It would therefore be careless to insure the risks associated with new technology before more is known about them."

## 1996 Swiss Re "Electrosmog – a phantom risk."

"The following chapters explain in detail why it is not possible to answer with certainty the question of whether weak electromagnetic phenomena pose health risks."

This report was later followed up by a 2013 report which stated that the consequences of electromagnetic fields have a high potential impact.

## 2013 AM Best Briefing

"Emerging Technologies Pose Significant Risks with Possible Long-Tail Losses"

"The risks associated with long term use of cell phones, although much studied over the past 10 years, remains unclear. Dangers to the estimated 250,000 workers per year who come in close contact with cell phone antennas, however, are now more clearly established. Thermal effects of the cellular antennas, which act at close range essentially as open microwave ovens can include eye damage, sterility and cognitive impairments. While workers of cellular companies are well trained on the potential dangers, other workers exposed to the antennas are often unaware of the health risks. The continued exponential growth of cellular towers will significantly increase exposure to these workers and others coming into close contact with high-energy cell phone antenna radiation."

## Great American Insurance Group Non-ionizing Radiation Factsheet

### **2011 *Business Insurance* White Paper**

“The Next Asbestos: Five emerging risks that could shift the liability landscape.”

This white paper examines mass tort exposures that may have the potential to cause major difficulties for commercial policyholders and their insurers and includes workers’ overexposure to radio frequency waves from rooftop wireless transmitters and also states, “research, meanwhile, also has shown biological effects from lower-level “nonthermal” exposure, and people exposed at lower levels have reported headache, dizziness, nausea, mood disorders, mental slowing and memory loss.”

## Lloyds of London White Papers

2018 Lloyds of London 2018 Emerging Risk Report

- This report does not specifically address electromagnetic radiation exposure but does review the “Human risks: including physical risks, mental risks, and digital consent. Physical risks: people using new realities technology may become disorientated in their real-world environments and injure themselves. Users may also become so used to making consequence-free actions in the metaverse – walking into traffic, for example – they could become desensitised to potentially fatal realworld risks. Mental risks: because these are relatively new technologies, there are currently no available long-term studies on their physical and mental impacts. Side effects vary dramatically from person to person but some of those associated with immersive gaming may include depression, isolation, reclusive behaviour, and even suicide and violence. Employers are going to have to consider the impacts of physical and mental risks from an employer’s liability perspective.”

2017 [Lloyds of London Report cites the 2010 Lloyds Report in a powerpoint on risk.](#)

2013 [Lloyd of Londons Risk Index Report](#)

- In this 2013 Report “harmful effects of new technology’ is listed as a factor increasing in risk in both North America and Latin America.

2010 [Lloyd’s of London Report on Electromagnetic Fields](#)

[“Electromagnetic fields from mobile phones: recent developments.”](#)

[Lloyd’s Emerging Risks Team Report, November 2010](#)

- This report looks first at current views on EMF as stated by international bodies such as the World Health Organisation and the European Union, and then goes on to examine recent scientific research into the field. It finally considers the implications for the insurance industry by scrutinising current legal cases on EMF and any comparisons which can be drawn with asbestos.
- “The danger with EMF is that, like asbestos, the exposure insurers face is underestimated and could grow exponentially and be with us for



many years.” Lloyd’s refuses to cover claims linked with RF radiation .

- This 2010 Report is repeatedly cited in Lloyds presentations in future years. [Lloyd’s: cover to cover A Day at Lloyd’s: An Introduction to the Lloyd’s Market Structure](#) Hank Watkins, President, Lloyd’s North America February 5, 2013

## **Austrian Accident Insurance Institute**

### **2016 Austrian Accident Insurance Institute (AUVA) ATHEM Report 2**

“Investigation of athermal effects of electromagnetic fields in mobile communications.” in German

“The ATHEM 2 project investigated cognitive effects as well as whether and how the RF-EMF changes cells of the human body.”

### **2011 Austrian Accident Insurance Institute (AUVA) ATHEM Report 1**

“Investigation of athermal effects of electromagnetic fields in mobile radio areas.” in German

“The ATHEM project investigates the athermal (heat-independent) biological effects of radiofrequency electromagnetic fields on an interdisciplinary basis.”

### **2009 Austrian Accident Insurance Institute (AUVA) ATHEM Report**

“Athermal effects confirmed – Limits questioned – Precaution required.”  
German document

“The Austrian General Accident Insurance provides a research report on athermal effects of mobile radio radiation and calls for precautionary

policies.”

## **2009 Austrian Accident Insurance Institute Report on Health Risks from Cell Phone Radiation**

### **“Nonthermal Effects of Electromagnetic Radiation in the Cell Phone Frequency Range”**

“The AUVA studies have verified that: Electromagnetic fields from cell phone radiation have an impact on the: Central Nervous System (brain), Immune System, Protein Syntheses.”

“The radiation-induced effects observed, however, were not always dosage-dependent as would be expected from thermal effects. Some cells showed an even stronger response when the 5-minute exposure was followed by a 10-minute break (intermittent exposure). This would also support a nonthermal effect mechanism. The project results, therefore, serve as a further confirmation of the existence of so-called nonthermal effects.” (p. 169)

“Any person, of course, can learn important lessons from these results. The findings of the study show that a cell phone user can minimize the potential risks through a prudent use of this technology.” (p.169)

“One of the observations showed that, among the different cells, those respond particularly strongly, which are metabolically active. This cell property is especially pronounced in growing tissues, that is, in children and youth. Consequently, these population groups would be more susceptible than average to the described effects.”

September 2016, KPMG International Cooperative (“[Emerging Risks in the Global Insurance Industry September 2016, Evolving Insurance Risk and Regulation Preparing for the future – Chapter 5](#)”

Although EMFs are not mentioned, the paper does reference the impact

to the eyes from blue light.

- “Two main risks could arise from LED usage: – Sleep disruption: LEDs emit a blue light which may affect melatonin production and circadian rhythms in the human body. These in turn can lead to sleep disruption and corresponding health problems. – Retina damage: The risk exists that the blue light emitted by LEDs could damage the retina. This is particularly risky for children as their eyes are not yet fully developed. LEDs are typically covered with a coating of phosphor which converts the blue light to white. However, over time this coating may wear down, meaning that the longer a product is used the more the risk increases. Currently, there is no widespread move by manufacturers or product developers to minimize these risks. In the future, if this risk manifests itself, insurers could face challenges similar to those that arose with asbestos, namely in defining when an injury is deemed to have occurred, and what product in particular can be attached to that injury.”

## NEWS ARTICLES

[A Coming Storm For Wireless? By Investment Analyst Gloria Vogel July 27, 2017 in Talk Markets](#)

- “Increased RF injuries may result from the proliferation of antennas to support expanding wireless activity.
- As workers and the medical community begin to better understand those RF injuries, the wireless industry could face increased RF safety awareness issues.
- Insurers no longer provide RF exposure coverage, so wireless providers may find property owners less willing to renew existing leases, or to lease space for antennas.”

[“The Warning In Your Smartphone” By Dr. Anna Young Published By Ferris University Of Sydney Business School](#)

Dr. Anna Young-Ferris published an article in The Responsible Investment Association of Australia in 2015

“Contingent liabilities that arise from the threat of litigation for smartphone manufacturers and service providers are one of the major investment risks. So much so that telco companies could be the next wave of ‘sin stocks.’” [R](#)

### **Geovital: A Review Of The UNSW Sydney ‘Faculty Of Law’ Program: Risks, Regulations And Liability Around Exposing Other People To Wireless Technology EMF Radiation**

The educational program at the University of New South Wales (UNSW) was aimed at lawyers, school principals, union representatives and others with an interest in radiation exposure, its legal ramifications and liability. This seminar was the first of its kind to be held in Australia and attracted professionals from across the country. Presentations were made by the following experts on various subjects related to radiation exposure. [Read it here](#)

### **Legal Presentations Which Includes The Electromagnetic Radiation Exclusion.**

[See Powerpoint Slide #13 from “An Assessment of Current Products, Risks, Coverages and Claims in Cyber Coverage Mary-Pat Cormier Bowditch & Dewey, LLP](#)

### **2012 Willis Insurance Broker Article on Electromagnetic Fields**

[“Electromagnetic Fields: More than Just an Eye Sore.” pg. 11-12.](#)

“Public health and toxic tort liabilities concerns surrounding EMFs have become contentious among utility companies, regulatory agencies, land owners and other affected stakeholders. While many studies have produced varying (and sometimes contradictory) results, many epidemiological studies suggest a possible human carcinogenic link in a classification group similar to, say – formaldehyde, DDT, dioxins and PCBs.”

“From an insurance perspective, when considering the potential legal and toxic tort implications, a layer of defense against EMF liabilities and exposures could be found through an environmental insurance product. Among other coverage grants being provided, these environmental policies cover third-party bodily injury and property damage claims and legal defense associated with EMFs. Many carriers have EMF coverage built directly into their form via their definition of “Pollutants” (e.g.,...any solid, liquid, gaseous or thermal pollutant, irritant or contaminant including but not limited to...smoke, vapors, toxic chemicals, hazardous substances... electromagnetic fields...). And, most environmental policies include “diminished third-party property value” in their definition of “property damage.””

### **2011 Business Insurance Article**

[Geisel, Roseanne White. “Insurers exclude risks associated with electromagnetic radiation.”](#)

The article provides a brief overview of electromagnetic radiation and the possible health effects, then notes multiple litigation cases on radiofrequency radiation exposure, as well as interviewing multiple insurance companies.

### **2011 Business Insurance Article on White Paper “The Next Asbestos: Five Emerging Risks that Could Shift the Liability Landscape”**

[“White paper explores risks that could become ‘the next asbestos.’”](#)

### **2002 Real Estate Finance Journal Article on the growing presence of electromagnetic field litigation**

[Forcade, Bill S. “Electromagnetic Field Litigation: A Growing Issue for Real Estate and Building Concerns.”](#)

“There is a growing public concern that electromagnetic fields cause personal injury or property damage. That concern is expressed in toxic

tort litigation, commercial property transactions, and insurance considerations. Because the number and variety of conflicts is increasing, it is important for prudent property managers to understand what this conflict is about, what kind of situations prompt EMF conflicts, what the courts have done, and what to do to reduce the risks of an EMF conflict.”

“Second, EMF litigation is profoundly dependent upon the character of the most recent scientific studies on the health effects of EMF. Even a single reputable scientific study showing that EMF are a direct cause of an adverse health effect could lead to an explosion in litigation.”

### **1999 Microwave News Article on Refusal of Lloyd’s of London to cover cell phone manufacturers**

[Microwave News March/April, “Wireless Notes”](#)

“Lloyd’s of London, the leading U.K. insurance underwriter, is refusing to cover manufacturers of wireless phones against health risks to users of their phones, the Guardian and its sister publication, the Sunday Observer, both leading British newspapers, reported on April 10 and April 11, respectively. The announcement follows the release of the University of Bristol findings of changes in cognitive function following exposure to signals from a mobile phone.”

### **1999 News Article in the Guardian on Current Status of Britain’s Insurance Policies**

Ryle, Sarah. [“Insurers balk at risks of phones.”](#)

News article from the Guardian describing the events leading up to a Lloyd’s underwriting refusing insure phone manufacturers against the damage to user’s health. The article briefly outlines Britain’s efforts in the wake of scientific publications showing harm from cell phone exposure.



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